IN THE CLAIMS:

Please AMEND claims 46 and 53, and ADD new claims 54 and 55, as follows. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

1-45. (Canceled)

46. (Currently Amended) An active vibration suppression apparatus comprising:

an actuator fixed to a vibration suppression target;

an inertial load driven relative to the target by said actuator; and

a driving system which drives said actuator based on a first signal corresponding to ~~the~~ vibration, generated or to be generated, of the target, wherein said driving system comprises a compensation unit which performs a compensation for the first signal,

wherein the compensation~~, separately or as a composite compensation,~~ comprises:

(i) a linear compensation for the first signal to obtain a first compensated signal, and

(ii) a nonlinear compensation for the first compensated signal to obtain a second compensated signal, a rate of a change in the second compensated signal to a change in an absolute value of the first compensated signal becoming less with an increase of the absolute value.

47. (Previously Presented) An apparatus according to claim 46, wherein said actuator drives the inertial load in a straight direction.

48. (Previously Presented) An apparatus according to claim 46, further comprising a vibration detection unit which detects a vibration of the target and outputs a detected signal as the first signal.

49. (Previously Presented) An apparatus according to claim 46, wherein said compensation unit performs the compensation using a sigmoid function.

50. (Previously Presented) An apparatus according to claim 46, wherein said driving system uses, as the first signal, one of a driving signal for a stage which is supported by the target and moves relative to the target, and a signal concerning a driving state of the stage.

51. (Previously Presented) An apparatus according to claim 46, wherein the linear compensation comprises at least one of a proportional compensation, an integral compensation, a differential compensation, a phase-lead compensation, and a phase-lag compensation.

52. (Previously Presented) An apparatus according to claim 46, wherein said compensation unit performs the nonlinear compensation using one of a monotone increasing function and a monotone decreasing function.

53. (Currently Amended) A method applied to an active vibration suppression apparatus, the apparatus comprising an actuator fixed to a vibration suppression target, and an inertial load driven relative to the target by the actuator, said method comprising:

performing a compensation for a first signal corresponding to vibration, generated or to be generated, of the target, wherein the compensation~~, separately or as a composite compensation,~~ comprises:

(i) a linear compensation for the first signal to obtain a first compensated signal; and

(ii) a nonlinear compensation for the first compensated signal to obtain a second compensated signal, a rate of a change in the second compensated signal to a change in an absolute value of the first compensated signal becoming less with an increase of the absolute value; and

driving the actuator based on the second compensated signal obtained in said performing step.

54. (New) An apparatus according to claim 46, wherein the compensation comprises the linear compensation and the nonlinear compensation as a composite compensation.

55. (New) A method according to claim 53, wherein the compensation comprises the linear compensation and the nonlinear compensation as a composite compensation.